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CENTRAL INTELLIGENCE AGENCY

OFFICE OF NATIONAL ESTIMATES

31 July 1961

MEMORANDUM FOR THE DIRECTOR

SUBJECT: The Soviet Requirement to Resume Nuclear Testing

1. The Soviet attitude toward a nuclear test ban as a separate arms control measure has cooled perceptibly in the past year or so, and in recent months has become almost openly negative. The Soviet response to the considerable concessions embodied in the new Administration's "last effort" was the obviously unacceptable "troika" proposal. Khrushchev's later suggestion that the Geneva talks be merged with the general disarmament negotiations probably was also regarded by the Soviets as unacceptable to the US, but as a more respectable cloak than the "troika" for its unwillingness to reach agreement.

2. We have usually explained Soviet tactics in the test talks as reflecting a desire to prolong indefinitely the present uninspected moratorium. While these latest moves remain open to this construction, they suggest an alternative explanation

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that the Soviets may wish to provoke the US into renewed testing because they themselves have a strong requirement for further tests. In a speech on 21 June, Khrushchev declared: "As soon as the United States resumes nuclear explosions, the Soviet Union will start testing its own nuclear weapons. Quite a few devices requiring practical testing have been developed in the Soviet Union." If these requirements become pressing, the Soviets would vastly prefer that the US assume the onus for test resumption. They have long been aware of conflicts over nuclear testing within the US Government, and may calculate that their present tactics will tip the balance in Washington and produce this result.

3. Soviet technical motivations for a resumption of testing have been considered in several national estimates since the moratorium began in November 1958, most recently in SNIE 11-9A-61, "The Possibility of Soviet Nuclear Testing During the Moratorium" (Limited Distribution, dated 25 April 1961). This paper lists several Soviet requirements: tests related to antimissile effects; tests of low-yield, light weight devices; tests directed toward increasing economy of fissile materials and improving yield-to-weight ratio; and new areas of development. Of the various Soviet requirements, that relating to antiballistic missile effects probably is the most urgent.

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4. The magnitude of the Soviet research and development effort on antimissile defenses is indicative of the highest priority. The test firing of antimissile missiles against incoming warheads may have occurred in late 1960 or early 1961. We have estimated that the Soviet antimissile missile probably will be equipped with a nuclear warhead, and that two of the nuclear devices tested by the USSR in 1958 might lend themselves to antimissile applications. However, we have no evidence of Soviet nuclear tests at very high altitudes (above 30,000 feet or in space) and believe that they lack basic effects data on such detonations. The USSR could, with varying degrees of difficulty, determine the different effects of a nuclear warhead against enemy missiles in underground tests and laboratory experiments, but could not simulate the effects of a high altitude nuclear explosion on radar and communications. These effects might have an important influence on the performance of an antimissile system.

5. We have estimated that the lack of such data would hinder but not prevent Soviet deployment of a suitable nuclear warhead for an antimissile missile. Although the SNIE 11-9A-61 Annex on technical requirements generally supports this judgment,

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its language strongly indicates the desirability of testing. In any case, it seems doubtful that without testing the Soviets could have adequate assurance of the effectiveness of their antimissile system. Design requirements for other components of the system -- in particular, those relating to accuracy and discrimination capability -- are critically dependent upon warhead effectiveness.

6. A Soviet decision to deploy an antimissile system probably would need to be made at least two years in advance of the planned date of first operational capability. Thus, if they plan to go operational in the period 1963-1966 as estimated, the decision should be made quite soon. In short, if nuclear testing is necessary, the requirement is urgent, and a decision to test cannot be long postponed. There is almost certainly pressure for renewed testing by the military, and Khrushchev and the other Soviet leaders would no doubt prefer to have something better than theoretical calculations before allocating billions of rubles for the deployment of antimissile defenses. Thus, unless the US takes him off the hook, Khrushchev faces three uncomfortable alternatives:

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- (a) to deploy an antimissile system of uncertain effectiveness;
- (b) to delay longer on deployment; (c) to break the ban himself.

FOR THE BOARD OF NATIONAL ESTIMATES:



SHERMAN KENT
Chairman

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Office Memorandum • UNITED STATES GOVERNMENT

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TO :

DATE: 1 Sept. 1961

FROM :

AD/NE

SUBJECT:

Attached Memorandum, "Soviet Requirement to Resume Nuclear Testing"

I am attaching hereto three copies of an earlier (31 July 1961) memorandum from the Board which discusses with greater precision the technical motivations for resumption of nuclear testing by the Soviets. You may wish to pass this memo along with the 1 September memo just sent up to you.

MEMORANDUM FOR: *AD/NE file*
LCI

1. The attached memorandum sets forth evidence that the USSR would like to be freed from restrictions on nuclear testing.

2. You may wish us to distribute copies to the members of the UNIA and to General Taylor.

Oral OK for
via J. Earmen
1 Aug 61. **SECRET**
AD/NE

cc: DDCI
DDI

NOTE: OSI participated in the 31 July 61
preparation of this paper. (DATE)

FORM NO. 101 REPLACES FORM 10-101
1 AUG 54 WHICH MAY BE USED.

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